



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
MAY 3, 2000 - 10:00 A.M.
EXECUTIVE CONFERENCE ROOM**

Present:	C. T. Maki	G. D. Taylor	C. Roberts
	P. F. Miller	T. E. Davies	J. W. Reincke
	T. Fort	S. Bower	
Guests:	M. Bott	C. Libiran	J. Grossklaus
	J. Ruskowski	C. Bleech	B. Dolman-Jersey

OLD BUSINESS

1. Approval of the Minutes of the April 6, 2000, Meeting - C. T. Maki

Minutes of the April 6, 2000, meeting were approved as written.

2. Jointed Reinforced Concrete Pavement (JRCP) vs Jointed Plain Concrete Pavement (JPCP) - C. T. Maki

As initiated at the last meeting, Steve Bower talked with industry about proposed alternatives to the original EOC approved recommendations. A field review with industry has been scheduled for Thursday, May 11, 2000. The purpose is for industry to see firsthand the problems that need to be addressed and resolved. Steve will report back at the June meeting.

3. Bureau of Highway Instructional Memorandum 2000-2, *Soil Erosion and Sedimentation Control Manual* - J. Ruskowski

All comments received from the divisions, regions, and DEQ have been reviewed and addressed. The revised manual will be sent to DEQ for their acknowledgment of the changes.

ACTION: Approved contingent upon written response from DEQ. Once that response is received, BOH IM 2000-02 will be signed, releasing the manual for publication and distribution.

NEW BUSINESS

1. Design Survey Manual - P. F. Miller

Design held a series of meetings with the region design surveyors and project development engineers during the process of preparing the new Design Survey Manual. The Table of

Contents was submitted for EOC review. The manual will eventually be on the Internet, as well as available in hard copy.

ACTION: The regions need to review the document before EOC approves it. Brian Dolman-Jersey will work with Thom Davies to obtain this review prior to resubmitting it to EOC.

2. **Construction Zone Advisory Committee - J. D. Culp**

Tabled.

3. **Procedures Manual for Mix Design Processing - M. Frankhouse**

Tabled.

4. **Approval of Parameters for Service Life of Work Zone Devices (Category 2 and a Portion of Category 3), and Routes for Compliance With NCHRP Report 350 - J. Grossklaus/M. Bott**

All Category 2 and a portion of Category 3 work zone devices purchased or manufactured after October 1, 2000, shall comply with NCHRP Report 350. Devices such as our 3.6 m Type III barricades, temporary mounted construction signing, and any combination of lights and/or signs attached to a device (i.e. barrel), in use before that date may be used for the duration of their normal service life. A service life of five years was suggested.

Report 350 applies to NHS routes only (4,448 miles out of 11,008 are on the NHS in Michigan). It is recommended that Report 350 apply to all state trunklines to eliminate the need to maintain two separate inventories and to minimize confusion for anyone performing work on a state trunkline.

Minimal testing has been done nationwide to approve some devices, but we may need to revise our specifications to meet Report 350 or have our devices tested for acceptance. The critical issues, the service life of the devices and the applicable routes, were presented to industry, who gave their support to the recommended parameters.

ACTION: A service life of four years for the subject work zone devices was approved and will be applied to all routes and all activities on our right-of-way.

5. **Bureau of Highway Instructional Memorandum 2000-11, 2000 Spring Updates to the Construction and Technology Division's Procedures Manuals - J. Ruszkowski**

The following manuals have been revised and are recommended for approval:

- Michigan Test Methods
- Construction Manual
- Materials Quality Assurance Manual
- Materials Sampling Guide

The revisions made are for clarification or correction of existing procedures and do not warrant review by industry/department partnering committees. The manuals were reviewed by the regions.

ACTION: Tom Maki and Gary Taylor will sign BOH IM 2000-11. The manual revisions are approved for publication and distribution.

6. **GM Barrier - P. F. Miller**

The department used the GM concrete safety barrier prior to 1976 when it was replaced with the New Jersey shape. A 1998 federal mandate for NCHRP Report 350 crash test compliant barriers on the NHS leaves our GM barriers in question.

The Barrier Advisory Committee is proposing two recommendations that will be sent out for review by the regions through Thom Davies and resubmitted for the June EOC meeting.

7. **Pavement Selections - C. Bleech**

A. **US-27 Reconstruct and Rehabilitation, CS 18033, JN 45426**

Reconstruction: South Leg US-10 to North Leg US-10

Alternate 1: Jointed Plain Concrete Pavement

Alternate 2: Flexible Bituminous Pavement

Rehabilitation: North Leg US-10 to Hatton Road

Alternate 1: Unbonded Jointed Plain Concrete Overlay

Alternate 2: Rubblize and Bituminous Overlay

A life cycle cost analysis was performed on the reconstruction and the rehabilitation alternates:

Alternate 2 for both reconstruction and rehabilitation was approved based on having the lowest Equivalent Uniform Annual Cost.

The pavement design and cost analysis for the reconstruction Alternate 2 are as follows:

38 mm	Bituminous Mix 5E10, Top Course (Mainline)	
50 mm	Bituminous Mix 4E10, Leveling Course (Mainline)	
152 mm	Bituminous Mix 3E10, Base Course (Mainline)	
140 mm	Bituminous Mix 4C and 3C (Shoulders)	
160 mm	Aggregate Base	
460 mm	Sand Subbase (or Existing Subbase)	
150 mm	Subbase Underdrains	
860 mm	Total Thickness	
Present Value Initial Construction Costs			\$417,161/kilometer
Present Value Initial User Costs			\$36,944/kilometer
Present Value Maintenance Costs			\$71,984/kilometer
Equivalent Uniform Annual Cost			\$29,091/kilometer

The pavement design and cost analysis for the rehabilitation Alternate 2 are as follows:

38 mm	Bituminous Mix 5E10, Top Course (Mainline)	
50 mm	Bituminous Mix 4E10, Leveling Course (Mainline)	
90 mm	Bituminous Mix 3E10, Base Course (Mainline)	
178 mm	Bituminous Mix 4C and 3C (Shoulders)	
229 mm	Rubblized Concrete Pavement	
407 mm	Existing Base/Subbase	
	Underdrains	
814 mm	Total Thickness	
Present Value Initial Construction Costs			\$216,785/kilometer
Present Value Initial User Costs			\$23,775/kilometer
Present Value Maintenance Costs			\$53,382/kilometer
Equivalent Uniform Annual Cost			\$16,693/kilometer

B. M-43, Zimmer Road to Williamston ECL, CS 33082, JN 45641

A life cycle cost analysis was performed on the two reconstruction alternates:

Alternate 1: Jointed Plain Concrete Pavement

Alternate 2: Flexible Bituminous Pavement

Alternate 2 having the lowest Equivalent Uniform Annual Cost was approved. The pavement design and cost analysis are as follows:

38 mm	Bituminous Mix 5E3, Top Course
50 mm	Bituminous Mix 4E3, Leveling Course
76 mm	Bituminous Mix 3E3, Base Course
160 mm	Aggregate Base
460 mm	Sand Subbase
100 mm	Subbase Underdrains
784 mm	Total Thickness
Present Value Initial Construction Costs	\$302,594/kilometer
Present Value Initial User Costs	\$8,752/kilometer
Present Value Maintenance Costs	\$130,418/kilometer
Equivalent Uniform Annual Cost	\$24,428/kilometer

(Signed Copy on File at C&T/Secondary)

Jon W. Reincke, Secretary

Engineering Operations Committee

JWR:kat

cc: EOC Members

Region Engineers

J. R. DeSana

R. J. Risser, Jr. (MCPA)

L. Stornant

T. L. Nelson

R. J. Lippert, Jr.

A. C. Milo (MRBA)

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